Claim Listing

1. (currently amended) In a pump having a rotary portion which compels the movement of a fluid by peristaltic compression of resilient tubing containing the fluid, a roller assembly comprising the following:

a rotor having at least one roller mounted in the rotary portion of the pump for contact with the resilient tubing, the at least one roller having a range of rotation in contact with the tubing during pump operation; and

a ~~roller~~ rotor control mechanism adapted and constructed to stop the rotor such that the at least one roller is stopped at a single, predetermined location on the tubing when the pump operation is stopped.

2. (original) A roller assembly in accordance with claim 1, wherein the at least one roller comprises two rollers.

3. (original) A roller assembly in accordance with claim 2, wherein the rollers are spaced apart circumferentially such that the rollers trap a consistent quantity of fluid between them during operation of the pump.

4. (original) A roller assembly in accordance with claim 1, wherein the rotor control mechanism comprises a slip clutch on which the rollers are mounted.

5. (currently amended) A roller assembly in accordance with claim 2, ~~further comprising a~~ wherein the rotor control mechanism is adapted and constructed to cause one of the rollers to stop at a bottom position thereof.

6. (original) A roller assembly in accordance with claim 5, wherein the ~~roller~~ rotor control mechanism comprises a stop-pin and stop bar arrangement.

7. (currently amended) A roller assembly in accordance with claim 2, further comprising a flow control mechanism adapted and constructed to compensate for localized tubing collapse at the ~~roller~~ rotor stop position.

8. (currently amended) In a pump having a rotary portion which compels the movement of a fluid by peristaltic compression of resilient tubing containing the fluid, a roller assembly comprising the following:

a rotor having a pair of rollers mounted at circumferentially spaced-apart positions in the rotary portion of the pump for contact with the resilient tubing, the rollers having a range of rotation in contact with the tubing during pump operation; and

a ~~roller~~ rotor control mechanism adapted and constructed to stop the rotor so that one of the rollers of the pair of rollers is stopped at a single, predetermined location on the tubing when the pump operation is stopped.

9. (original) A roller assembly in accordance with claim 8, wherein the rollers are mounted 180° from one another.

10. (original) A roller assembly in accordance with claim 9, further comprising a pump occlusion spaced from the rollers such that the rollers trap a consistent quantity of fluid between them during operation of the pump.

11. (original) A roller assembly in accordance with claim 8, wherein the rotor control mechanism comprises a slip clutch on which the rollers are mounted.

12. (original) A roller assembly in accordance with claim 9, wherein the rotor control mechanism is adapted and constructed to cause one of the rollers to

stop at a bottom position thereof.

13. (original) A roller assembly in accordance with claim 12, wherein the rotor control mechanism comprises a stop-pin and stop bar arrangement.

14. (original) A roller assembly in accordance with claim 9, further comprising a flow control mechanism adapted and constructed to compensate for localized tubing collapse at the roller stop position.

15. (original) A method for operating a pump having a rotary portion which compels the movement of a fluid by peristaltic compression of resilient tubing containing the fluid comprising the following:

mounting a rotor having at least one roller in the rotary portion of the pump for contact with the resilient tubing, the at least one roller having a range of rotation in contact with the tubing during pump operation;

operating the pump by rotating the rotor ~~roller~~; and

stopping the ~~roller~~ rotor by using a ~~roller~~ rotor control mechanism to stop the rotor so that the at least one roller is stopped at a single, predetermined location on the tubing when the pump operation is stopped.

16. (currently amended) A method in accordance with claim 15, ~~further comprising~~ wherein mounting comprises mounting a rotor having ~~the at least one roller comprises mounting~~ two rollers.

17. (original) A method in accordance with claim 16, wherein mounting comprises ~~further comprising~~ mounting the rotor so that the rollers are ~~to be~~ spaced apart circumferentially, thereby trapping a consistent quantity of fluid between the rollers during operation of the pump.

18. (original) A method in accordance with claim 15, further comprising mounting the rollers on a slip clutch.

19. (currently amended) A method in accordance with claim 16, wherein stopping comprises using the rotor control mechanism to stop the rotor so ~~further comprising stopping~~ one of the rollers is stopped ~~to stop~~ at a bottom position thereof.

20. (original) A method in accordance with claim 16, further comprising compensating for localized tubing collapse at the roller stop position via a flow control mechanism.